THE SCHOOL DISTRICT OF PHILADELPHIA
Office of Capital Programs
440 North Broad Street, 3rd Floor – Suite 371
Philadelphia, PA 19130

TELEPHONE: (215) 400-4730

Addendum No. 001

Subject: **2022 Classroom Modernization**
SDP Contract Numbers: 2022-005-G, 2022-005-E

Location: **Benjamin Franklin School**
5741 Rising Sun Avenue, Philadelphia, PA 19120

This Addendum, dated February 04, 2022 shall modify and become part of the Contract Documents for the work of this project. Any items not mentioned herein, or affected by, shall be performed strictly in accordance with the original documents.

ATTENTION ALL BIDDERS – IMPORTANT NOTICE

SPECIFICATION

Section 01 1135 Abatement Technical Specification

1. ADD the attached specification section.

END OF ADDENDUM #001

TECHNICAL SPECIFICATIONS

PREPARED FOR

SCHOOL DISTRICT OF PHILADELPHIA
440 NORTH BROAD STREET
PHILADELPHIA, PENNSYLVANIA

FOR

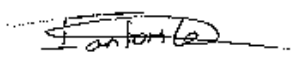
ASBESTOS REMOVAL

AT

BEN FRANKLIN ELEMENTARY SCHOOL
5735 RISING SUN AVENUE
PHILADELPHIA, PA 19120

CRITERION'S PROJECT NUMBER: 220223
DRAWING NUMBER: A-001 through A-400
BID NUMBER:

PREPARED BY



IAN FORSTER
AHERA PROJECT DESIGNER
PENNSYLVANIA CERTIFICATION #035653

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SECTION 1

TERMINOLOGY

1.1 TERMINOLOGY

The following terms used in these Specifications are defined as listed below:

A. Abatement: Procedures to control fiber release from asbestos-containing building materials. These procedures include securing the work area, removing the material, cleaning the area, and disposal of the material.

B. AHERA: Asbestos Hazard Emergency Response Act (and associated regulations; 40 CFR 763)

C. Air Monitoring: The process of measuring the fiber content of a specific volume of air in a stated period of time.

D. Air Lock: A System for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area. It consists of two curtained doorways separated by a dead air space of 4 feet.

E. Amended Water: Water to which a surfactant has been added.

F. Asbestos Abatement Contractor: A contractor who is licensed and certified to perform asbestos abatement in Pennsylvania and the City of Philadelphia.

G. Asbestos Control Regulations (ACR): The City of Philadelphia's regulations related to asbestos abatement.

H. Asbestos Projector Inspector (API): A person licensed by the City of Philadelphia to monitor asbestos abatement projects who will also be the building owner's representative on-site.

I. Authorized Person or Visitor: The building Owner(s), or his authorized representative, or any representative of a regulatory or other agency having jurisdiction over the Project.

J. Clean Room: An uncontaminated area or room, which is a part of the work decontamination unit with provisions for storage of worker's street clothes and protective equipment.

K. Child Occupied Facility: Is defined as when a child below the age of six (6) visits a location on two (2) separate occasions with a week (Sunday through Saturday) provided that each visit last at least three (3) hours for a total of six (6) hours per week and the combined annual visit last at least sixty (60) hours per year.

L. Contractor: See asbestos abatement contractor

M. Curtained Doorway: A device to allow ingress and egress from one room to another while permitting minimal air movement between the rooms. It is typically constructed by placing two overlapping sheets of plastic over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway.

N. Decontamination Enclosure System: A series of connected rooms, with curtained doorways between any two adjacent rooms, for the decontamination of workers and of materials and equipment. A decontamination enclosure system always contains at least one air lock.

O. Encapsulating Paint: A product designed to coat, and seal surfaces covered or coated with lead-based paint to prevent exposure to lead. The product/paint must comply with the American Society for Testing and Materials (ASTM E 1795, E 1796, and E 1797.

P. Equipment Decontamination Enclosure: That portion of a decontamination unit designed for controlled transfer of materials and equipment, typically consisting of a washroom and a holding area.

Q. Equipment Room: A contaminated area or room, which is part of the worker decontamination unit with provisions for storage of contaminated clothing and equipment.

R. Fixed Object: A unit of equipment or furniture in the work area, which cannot be removed for the work area.

S. Glovebag Technique: A method with limited applications for removing small amounts of friable asbestos-containing material (ACM) from HVAC ducts, short piping runs, valves, joints, elbows, and other nonplanar surfaces in a non-contained work area. The glovebag assembly is a manufactured or fabricated device consisting of a glovebag (typically constructed of six (6) millimeter transparent plastic), two (2) inward projecting long sleeve rubber gloves, one inward projecting water wand sleeve, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process. All workers who are permitted to use the glovebag technique must be highly trained, experienced, and skilled in this method.

T. HEPA Filter: A high efficiency particulate absolute (HEPA filter capable of trapping and retaining 99.97 percent of particles (asbestos fibers) greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.

U. HEPA Vacuum Equipment: Vacuuming equipment with a HEPA filter system.

V. Holding Area: A chamber in the equipment decontamination area located between the washroom and an uncontaminated area. The holding area comprises an air lock.

W. Logbook: A notebook or other book containing essential project data and daily project information and a daily project diary. This book is kept on the project site at all times.

X. Movable Object: A unit of equipment or furniture in the work area which can be removed from the work area (this does not include objects that are bolted to the floor, i.e., bookshelves).

Y. Negative Air Pressure Equipment: A portable local exhaust system equipped with HEPA filtration and capable of maintaining a constant, low velocity air flow into contaminated areas from adjacent uncontaminated areas.

Z. Major Asbestos Project: Any project that involves the removal, enclosure, or encapsulation of 80 square feet (SF) or 40 linear feet (LF) of asbestos containing material.

AA. Minor Asbestos Project: Any project that involves the removal, enclosure, or encapsulation of more than 12 SF but less than 80 SF or more than 3 LF but less than 40 LF of asbestos containing material.

BB. Onsite Hygienist: The onsite professional employed by Criterion Laboratories, Incorporated, and hired by the Owner for the purpose of ensuring that work is in compliance with these specifications. See also Project Designer.

CC. Plastic Sheeting: Disposable plastic (polyethylene) sheeting that is fire retardant and at a minimum six (6) millimeters thick.

DD. Project Designer: An individual who is licensed and certified to design asbestos abatement specification by the state of Pennsylvania, please also refer to API as the owner's representative on the site.

EE. Removal: All herein specified procedures necessary to remove ACM from the designated areas and to dispose of these materials at an acceptable site.

FF. RRP: Renovation, Repair and Painting program (40 CFR Part 745)

GG. Shower Room: A room between the clean room and the equipment room in the worker decontamination unit with hot and cold or warm running water and suitably arranged for complete showering during decontamination. The shower room comprises an air lock between contaminated and clean areas.

HH. Surfactant: A chemical wetting agent added to water to improve penetration.

II. Washroom: A room between the work area and the holding area in the equipment decontamination area. The washroom comprises an air lock.

JJ. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened

with water, and by afterwards disposing of these cleaning tools as asbestos-contaminated waste.

KK. Work Area: Designated rooms, spaces, or areas of the Project in which asbestos abatement actions are to be undertaken or which may become contaminated as a result of such abatement actions. A contained work area is a work area, which has been sealed, plasticized, and equipped with a decontamination enclosure system. A non-contained work area is an isolated or controlled-access work area which has neither been plasticized nor equipped with a decontamination enclosure system.

LL. Worker Decontamination Enclosure System: That portion of a decontamination unit designed for controlled passage of workers, and other personnel and authorized visitors, typically consisting of a clean room, a shower room, and an equipment room.

*****END OF SECTION*****

SECTION 2

SCOPE OF WORK

2.1 SCOPE OF WORK

The work shall include furnishing all materials, labor, equipment, and incidentals for the complete and proper removal and disposal of all asbestos-containing materials (ACM) within the time constraints and associated with the following areas:

A. Ben Franklin Elementary School
5737 Rising Sun Avenue
Philadelphia, PA 19120

Schedule: A phasing schedule is attached to this specification in Section 2.1; this must be completed by the asbestos abatement contractor (AAC) listing each work area on each floor and be approved by the building owner prior to any asbestos abatement activity.

Asbestos

The specific quantities and locations of asbestos-containing materials are listed below:

Ben Franklin Elementary School

Location	Description	Amount		Action	Planned Start Date
		Square	Linear		
1st Floor					
Classroom 110	Blackboard Glue Dots	20		REM	
Classroom 111	Blackboard Glue Dots	20		REM	
Classroom 112	Blackboard Glue Dots	20		REM	
Classroom 113	Blackboard Glue Dots	20		REM	
Classroom 114	Blackboard Glue Dots	20		REM	
Classroom 115	Blackboard Glue Dots	20		REM	
Classroom 117	Blackboard Glue Dots	20		REM	
2nd Floor					
Classroom 214	Blackboard Glue Dots	20		REM	
Classroom 216	Blackboard Glue Dots	20		REM	
Classroom 219	Blackboard Glue Dots	20		REM	
Classroom 221	Blackboard Glue Dots	20		REM	

GENERAL SCOPE OF WORK NOTES:

1. The asbestos abatement contractor will be responsible for removing any items from the work area that 1) cannot be properly protected and 2) may impede the removal process.

2. Computers, monitors, printers, or other electronic equipment shall also be removed by the School District of Philadelphia. If any electronic items are found in the work area and need moving, the AAC should contact School District of Philadelphia personnel or on-site representative before moving these items.

3. Contractors are reminded to follow OSHA regulations regarding safety and work in elevated spaces throughout the project.

4. Contractors are reminded that the API will be the building owner's representative on-site and will conduct all pre-commencement inspections prior to all asbestos abatement, air sampling (pre, during and clearance) and will enforce this specification and the City of Philadelphia, State of Pennsylvania, and EPA regulations.

5. All quantities are approximate and must be verified by contractors.

6. Contractors are reminded that any damage to the building through the asbestos abatement activity is the responsibility of the contractor to repair. The asbestos abatement contractor will have access to the elevator, but it must be protected from any damage while in use and if damage occurs it must be repaired, at the cost of the asbestos abatement contractor, back to its original standard.

7. All waste generated by the asbestos abatement activity may only pass through the building on an approved route. The waste route must be approved by either the School District of Philadelphia or its on-site representative.

8. It is the asbestos abatement contractor's responsibility to submit the initial asbestos abatement notification to the appropriate agencies, but it is also the asbestos abatement contractor's responsibility to submit an alternative method request when appropriate.

9. A written notification will be generated and issued to the building owner if at any time there is non-compliance with the Philadelphia ACR, non-compliance with this specification, the outside the work area samples exceed 0.01 fiber per cubic centimeter (f/cc), a loss of negative pressure occurs, there is a containment breech or visible debris is observed outside the work area.

Notes related to the blackboard glue dot abatement

1. The asbestos abatement contractor will use a non-friable method to remove the glue dots. The asbestos abatement contractor is responsible for the submittal of any type of alternative method to the City of Philadelphia as part of the notification process (where applicable).

2. All waste from the removal of asbestos must be placed in asbestos waste bags following the City of Philadelphia ACR.

*****END OF SECTION*****

SECTION 3

TECHNICAL SPECIFICATIONS – CONTAINED SPACE

Section 3 covers the removal under full containment of any non-friable ACM that have been rendered friable during the removal process such as glue dots. Work area must be fully contained with two (2) layers of six (6) millimeter fire retardant plastic sheeting on both walls and floors. A 3-stage decontamination unit and keeping the work area under negative pressure is also required.

3.1 APPLICABLE DOCUMENTS

The current issue of each document shall govern. Where conflict among requirements or with these Specifications exists, the more stringent requirements, as determined by the Project Designer, shall apply.

3.1.1 Regulations

The Asbestos Abatement Contractor shall comply with all applicable federal, state, and local regulations including but not limited to the following.

3.1.2 Title 29, Code of Federal Regulations, Section 1910.1001 and 1926.1101, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

3.1.3 Title 40, Code of Federal Regulations, Part 61, Subparts A and B, National Emission Standards for Hazardous Air Pollutants (NESHAP).

3.1.4 Title 40, Code of Federal Regulations, Part 763, Asbestos-Containing Materials in Schools, Final Rule and Notice (AHERA).

3.1.5 Compliance with Pennsylvania Asbestos Accreditation and Certification Act #161, effective December 21, 1998, which amends Act #194.

3.1.6 Asbestos Control Regulations, Title 6 - Health Code, of the Philadelphia Code, Chapter 6-600 (Asbestos Projects) (amended July 20th, 2009)

3.1.7 All state, county, and city codes and ordinances as applicable.

3.2 SUBMITTALS AND NOTICES

Prior to commencement of work:

3.2.1 Send written notice of proposed abatement work, to the applicable state agencies (DOLI), EPA (with copy to the Project Designer) and City of Philadelphia as follows:

A. Not fewer than ten (10) days prior to work.

1. U.S. Environmental Protection Agency Region III

Asbestos NESHAP Coordinator
1650 Arch St.
Philadelphia, PA 19103

2. City of Philadelphia
Department of Public Health
Air Management Services
Asbestos Control Unit
321 University Avenue
Philadelphia, PA 19104-4597

3. Pennsylvania Department of Environmental Protection

4. Pennsylvania Department of Labor and Industry

3.2.2 The asbestos abatement contractor shall also submit, when appropriate, all alternative method requests to the appropriate agencies listed above and submit to the on-site API evidence that the alternative method has been approved prior to any abatement activity.

3.2.3 Asbestos Abatement Contractor shall submit, no less than fifteen (15) days prior to the job starting, copies of the notification and all required permits, as well as plans for the transportation and disposal of asbestos-containing or asbestos-contaminated materials to both the School District of Philadelphia and its consultant.

3.2.4 Have available documentation demonstrating that each employee has had training in accordance with 40 CFR 763 on the hazards of asbestos exposure, proper use of PPE and decontamination procedures.

3.2.5 Have available proper medical documentation that the employee has been examined as required by OSHA regulations. Proof of a current medical examination will be required for all personnel who may enter the work areas.

3.2.6 Have available names and training certificate of superintendent and foremen who will be performing work related to this Project. Copies of these documents shall be maintained in Project Logbook. Substitutions may be made by written notice to Engineer.

Note: All supervisors and crew foremen who will work on this project must hold a valid certificate of supervisor training granted by an accredited training agency and licensed by the State of Pennsylvania Department of Labor and Industry.

3.2.7 Have available an authorized personnel list of employees who have received training and medical examinations per paragraphs 3.2.4 and 3.2.5 of this section. A copy of this list is to be maintained in Project Logbook.

3.2.8 Have available on-site, a Project Logbook. The Project Logbook will include copies of the asbestos abatement Contractor's Respiratory Protection program, EPA, and OSHA documents, worker decontamination procedures, equipment decontamination procedures, authorized personnel list, format of daily report sheets and format of landfill manifests.

The completed daily reports and landfill manifests shall be submitted along with pay requests for completed work. Copies of these front-end documents shall be maintained at the site during the asbestos removal phase of the Project.

3.2.9 Post warning signs in and around the work area to comply with OSHA regulations 20 CFR 1910.1001(g) (l) and 1926.1101. The placement of these signs must be coordinated with the Owner's representative.

3.2.10 The Owner or Project Designer, and the asbestos abatement contractor must agree in writing on building and fixture condition prior to commencement of work within a work area. This documentation could include photographs of damage, or a written narrative submitted to the School District of Philadelphia's on-site representative. If no prior damage is noted within a work area, then documentation is still required. The asbestos abatement contractor shall have an inventory of all items removed from the work areas so that items can be placed back into the appropriate space. If items stay with a classroom, office, or work area, then no inventory list is required.

3.2.11 Have available documentation that HEPA-vacuums, negative air pressure equipment, and other local exhaust ventilation equipment conform to ANSI Z9.2-79.

3.2.12 The asbestos abatement contractor must inform other employers on-site of the nature of the Contractor's work with asbestos and the existence of and requirements pertaining to regulated areas in order to comply with OSHA regulation 29 CFR 1926.1101(d).

3.3 SUPERINTENDENT, FOREMAN, CRAFTSMAN

The Asbestos Abatement Contractor shall have a job superintendent present at all times while work in this Contract is in progress.

The Project Superintendent shall be thoroughly familiar and experienced with asbestos removal and related work and shall be familiar with and shall enforce the use of all safety procedures and equipment. He shall be knowledgeable of all EPA, City of Philadelphia, Pennsylvania, OSHA, and NIOSH requirements and guidelines.

In addition to the Superintendent, the asbestos abatement contractor shall furnish one (1) or more licensed supervisor(s) who are familiar and experienced with asbestos removal and its related work, safety procedures, and equipment.

3.3.1 It shall be a requirement of this Contract that the superintendent and/or one or more of the asbestos abatement contractor's supervisors be inside the work area at all times while work is in progress.

3.3.2 It is the intent of these Specifications that all phases of the work shall be executed by skilled craftsmen experienced or receiving training by experienced personnel in each respective trade.

3.3.3 The asbestos abatement contractor's superintendent is required to keep the Project Log Book up to date, ensure that all work criteria is followed in the proper sequence, and to

document the progression of the job. Documentation will be required for each individually prepared work area.

3.4 MATERIAL AND EQUIPMENT

3.4.1 Materials

3.4.1.1 Deliver all materials in the original packages, container, or bundles bearing the name of the manufacturer and the brand name. Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.

Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be disposed of in accordance with the applicable regulations.

3.4.1.2 Plastic (polyethylene) sheeting must be fire retardant and six (6) millimeter thickness or greater as specified in sizes to minimize the frequency of joints.

3.4.1.3 Tape must be capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheeting to finished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water. Use tape with tough backing which does not leave residue on the adhering surface.

3.4.1.4 Surfactant: Shall consist of 50 percent polyoxyethylene ether and 50 percent of polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration of one (1) ounce of surfactant to 5 gallons of water for all asbestos abatement activity.

3.4.1.5 Encapsulant: A product designed to coat, and seal surfaces covered or coated with asbestos to prevent exposure to asbestos. This material must comply with American Society for Testing and Materials (ASTM E 1795, E 1796, and E 1797) for encapsulating paint.

3.4.1.6 Impermeable containers: Suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an approved site, labeled in accordance with OSHA Regulation 29 CFR 1910.1001. Containers must be both air and watertight and must be resistant to damage and rupture. Plastic bags shall be a minimum of six (6) millimeter thick and to comply with City of Philadelphia Asbestos Control Regulations must be clear and colorless.

3.4.1.7 Warning labels and signs: As required by OSHA Regulation 29 CFR 1910.1001 and 1926.1101 and NESHAP 61.149.

3.4.1.8 Other materials: Provide all other materials, such as lumber, nails, and hardware, which may be required to construct and dismantle the decontamination area and the barriers that isolate the work area.

3.4.2 Tools and Equipment

3.4.2.1 Provide all suitable tools for asbestos removal.

3.4.2.2 Negative air pressure equipment: High efficiency particulate absolute (HEPA) filtration systems shall be equipped with filtration equipment in compliance with ANSI Z9.2-79, local exhaust ventilation. No air movement system or air filtering equipment shall discharge unfiltered air outside the work area. A negative pressure shall be held on the work area continuously (24 hours a day) from the start of work in the area until the area has been decontaminated and certified as such by the required testing. There shall be a sufficient number of units to provide a minimum of four (4) air changes per hour or a minimum negative pressure differential of 0.02 inches of water in the work area. All exhausted air shall be filtered and discharged outside the building away from any air intake devices. A positive indication of negative air pressure must be present and visible i.e., digital, or analog manometer. Continuous negative pressure recording shall be the responsibility of the asbestos abatement contractor. Negative pressure will be verified by the on-site hygienist using smoke testing and/or manometers.

3.5 WORK AREA PREPARATION (Contained Space)

The asbestos abatement contractor understands that this work will occur at a partially occupied facility and that the utmost care must be taken to prevent the exposure of occupants to airborne asbestos fibers.

In addition, the asbestos abatement contractor understands that asbestos removal work may present various hazards to his workforce. The asbestos abatement contractor shall take all precautions to assure his workers' safety.

In order to increase workplace safety and security, the Contractor shall abide by the following conditions:

3.5.1 General

A. All asbestos removal areas shall be restricted to authorized personnel only. All routes through the building to be used by the asbestos abatement contractor shall be approved by the Owners representative.

B. All air filtration devices (AFDs) shall exhaust to the exterior of the building. For every ten (10) AFDs or portion thereof, there shall be at least one AFD unit on-site for backup purposes. The API, at his/her discretion, may require more AFDs as backups.

C. Electrical power sources shall meet the following requirements:

1. If required, a School District of Philadelphia electrician will be made available (please note a twenty-four (24) hour notification period will be required for this service) to install wiring other than extension wires/cords and/or make connections to an electrical panel box. The electrician shall check all of the wiring and load test the circuits supplying power to the containment area prior to any removal activities.

2. The asbestos abatement contractor is required to have an independent temporary electrical panel associated with each major work area (as defined by Philadelphia ACR) that is within twenty-five (25) feet of the work area.

3. All electrical power to the work area shall be protected by Ground Fault Circuit Interrupters (GFCI) located outside of the work area.

4. No electrical room servicing the work area shall be sealed with polyethylene. Access to all over-current devices protecting the conductors supplying both the occupied and the work areas shall remain readily accessible throughout the duration of the project.

D. All Federal, state, and local regulations wherever applicable shall be met in all cases.

E. All surrounding work, fixtures, soil lines, drains, water lines, gas pipes, electrical conduit, wires, utilities, railings, shrubbery, landscaping, etc. which is to remain in place shall be carefully protected and, if disturbed or damaged, shall be repaired or replaced as directed by the Owner, at no additional cost to the owner.

F. The asbestos abatement contractor shall assure that no exits from the building are obstructed, that appropriate safety barriers are established to prevent access and that work areas are kept neat, clean, and safe.

G. Replace or repair any items damaged, due to work performed under this contract, equal to their original construction and finish. Repaired or replaced items will be subject to the Owner's approval.

H. The use of rubber-tired vehicles which use non-volatile fuels for conveying material inside the building and provide temporary covering, as necessary, to protect floors is with the School District of Philadelphia’s approval only.

I. Debris shall be removed from the site daily. Premises shall be left neat and clean after each work shift, so that work may proceed the next regular workday without interruption.

J. Protect and maintain floors along removal routes from damage, wear, and staining. Damage to be corrected to the satisfaction of and at no cost to the Owner.

3.5.2 Separation Barriers

A. The work area shall be separated from the occupied portion of the building and/or operating equipment (mechanical, electrical, etc.) by separation barriers (if applicable).

Construction of barriers shall meet the following minimum requirements:

1. Where framing is required for the installation of separation barriers, 2-inch by 4-inch studs spaced not more than 16 inches on center shall be used.

2. A minimum of 3/8 inch thick plywood shall be used for separation barriers adjacent to the containment area and/or areas, which are part of the containment.

3. The hard barrier should be a minimum of eight (8) feet high.

4. Two (2) layers of six (6) millimeter fire retardant polyethylene sheeting shall be installed on each side of the separation barriers.

B. All separation barriers shall be secured to the building structure with all joints caulked and all seams taped.

1. Exception:

The separation barrier(s) at the emergency means of egress from the work zone shall be of the pull downs and/or kick out type. Duct tape shall cover all seams located on the work zone side and critical barriers shall be installed on each side.

C. Emergency means of egress for the building occupants and for workers shall not be blocked.

3.5.3 Openings Around Penetrations

A. Prior to asbestos removal, all floor, ceiling, and wall openings shall first be cleaned using an approved asbestos removal HEPA-vacuum and shall be wet wiped. Where openings are found to contain gross amounts of asbestos-containing material, localized removal methods shall be conducted prior to cleaning.

B. All penetrations, whether sealed prior to asbestos removal or as a result of asbestos removal, shall be sealed using materials determined to be non-combustible in accordance with ASTM Standard E-136 which will maintain the fire rating of any rated assembly in which they are used.

C. Sealing of penetrations, localized asbestos removal, and subsequent sealing work shall be performed under negative pressure. The area shall also be kept under negative pressure when testing for penetration leaks or missed penetrations.

3.5.4 Contingency Plans During Abatement

The current state-of-the-art should be used to establish a contingency plan and this plan must be submitted to the School District of Philadelphia for approval prior to any asbestos abatement activity. A flexible contingency plan shall be based on the kind of asbestos involved, the number of persons exposed, and the degree of occupancy at the time in question; the fiber concentration level at which removal would have to stop (while remedial measures are taken) and the levels at which the building would need to be vacated will be a function of the relationship between measured fiber concentrations and established background levels.

Increasingly aggressive responses up to and including vacating the building would be undertaken based on the degree which fiber concentrations exceed established background levels.

A. In case of loss of power to the air filtration units, the procedures given below shall be followed:

1. All removal activities and preparation work shall cease immediately.

2. All removed waste within the work area shall be sprayed with amended water. A sufficient number of airless sprayers shall be used to mist the air in the work area.

3. An attempt shall be made to restore power by resetting the electrical breakers and/or switches, replacing fuses, and checking extension cord connections. If power cannot be restored by these means, the electrician, pursuant to Section 3.5.1(c) of these specifications shall be called upon to restore the electrical power.

4. Electrical power shall be restored to all of the required air filtration units without substantial loss of time. This shall be done by the use of generator(s), if necessary.

3.6 EXECUTION

3.6.1 Preparation

A. Separation of work areas form occupied areas:

1. Separate the parts of the building required to remain in use from parts of the building that will undergo asbestos removal by means of hard and airtight barriers as listed in Section 3.5.2:

2. Shut down and lock out electric power. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements. Control of all work area power sources shall be from outside of the work areas.

3. Shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the structure.

4. Seal off all openings, including but not limited to window, corridors, doorways, skylights, ducts, grill, diffusers, and any other penetrations of the work areas, with two (2) independent layers of six (6) millimeter fire retardant plastic sheeting sealed with tape. The asbestos abatement contractor shall check above suspended ceilings in adjacent work areas for penetrations into the work area. All such penetrations shall be sealed as critical barriers.

5. Post safety warning signs which follow the "Sample Format Warning Sign" shown below at all entrance, exits and approaches to the work area:

Sample Format Warning Sign
Minimum Size – 24"x36"
Material – Aluminum or Fiberglass
Script:

DANGER

ASBESTOS

MAY CAUSE CANCER

CAUSES DAMAGE TO LUNGS

AUTHORIZED PERSONNEL ONLY

WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA

B. Pre-clean work area:

1. Clean all moveable objects within the work area using HEPA vacuum equipment and wet cleaning methods. Remove these objects from the work area to a designated temporary storage location.

   Protection of and accounting for the stored materials is the sole responsibility of the asbestos abatement contractor.

2. Pre-clean fixed objects within the proposed work areas, using HEPA vacuum equipment and/or wet cleaning methods as appropriate and enclose with a minimum of one (1) layer of fire retardant six (6) millimeter polyethylene sheeting sealed with tape.

3. Pre-clean the proposed work areas using HEPA vacuum equipment or wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters.

C. Prepare work area:

1. Cover walls, floors and, if appropriate, ceiling surfaces with plastic sheeting sealed with tape. Use a minimum of two (2) layers of six (6) millimeter fire retardant plastic sheeting on walls and floors, and if appropriate, one (1) layer of six (6) millimeter fire retardant plastic on the ceiling.

   All joints in the plastic sheeting shall have a minimum of twelve (12) inches of overlap and shall be securely sealed with tape to prevent leakage of air and water.

   A viewing port shall be installed in all accessible walls surrounding the containment that is a minimum of 18” square and made of a transparent shatterproof material that is a minimum of 0.125” thick. The viewing ports shall be installed following the City of Philadelphia Asbestos Control Regulations.

D. Decontamination enclosure systems:

Build suitable enclosure systems described herein before start of construction.

In all cases, access between contaminated and uncontaminated rooms or areas shall be through an air lock previously defined. Access between any two rooms within the decontamination enclosure system shall be through a curtained doorway.

1. Construct a work decontamination enclosure system contiguous to the work area consisting of three totally enclosed chambers to conform to standard plans of clean, shower and dirty or equipment room. Each chamber will be constructed using two (2) layers of six (6) millimeter fire retardant plastic sheeting on floors, walls, and ceilings. The doorways shall be z-flapped using three (3) overlapping layers of plastic sheeting; at least one flap on each set of flaps should be weighted. The shower system shall be constructed as follows:

   a. A shower room with two (2) z-flap doorways, one to the equipment room and one to the clean room. Plastic on shower room and adjoining equipment and clean rooms shall be opaque.

   b. The shower room shall contain at least one (1) shower for every eight (8) workers with both hot and cold running water that is adjustable in the shower. Careful attention shall be paid to the shower enclosure to ensure against leaking of any kind.

c. Liquid soap and shampoo shall be in the shower at all times and towels should be provided in the clean room for drying purposes.

d. Shower water should either be filtered using a portable water filter attached to a five (5) micron filter and then pumped into the drain or collected and disposed of as asbestos waste.

E. Maintenance of enclosure system:

1. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

2. Visually inspect enclosures at the beginning of each work period.

3. Use smoke methods to test effectiveness of barriers when directed by Owner or owner representative.

F. Asbestos removal work shall not commence until:

1. Arrangements have been made for disposal of waste at an acceptable site.

2. Work areas and decontamination enclosure systems and parts of the building required to remain in use are effectively segregated.

3. Tools, equipment, and material waste receptors are on hand.

4. Arrangements have been made for building security.

5. All other preparatory steps have been taken, applicable notices posted, and permits obtained.

6. The asbestos abatement contractor requests a pre-commencement inspection.

7. The Project Designer or the API authorizes work to commence.

3.6.2 Asbestos Removal (Contained Space)

A. Prepare site per paragraph 3.6.1.

B. Remove and clean ceiling mounted objects (if applicable), such as lights and other items not previously sealed off, that may interfere with asbestos removal. Use handheld water spraying or HEPA vacuum equipment during fixture removal to reduce fiber dispersal. Decontaminate the lights, wrap in plastic and store for reinstallation (if applicable) upon completion of testing procedures.

C. The asbestos abatement contractor must provide an on-site continuous reading manometer for each containment (when required) to determine that the negative

pressure is of adequate capacity to remove air from each room of the work area that is undergoing asbestos removal. The minimum negative pressure shall be -0.02 column inches of water. This may be accomplished through moving individual machines or ducting to individual rooms. The negative pressure shall be designed to provide a complete air change in the work area, each 15 minutes maintaining a minimum negative pressure differential. The Contractor will make calculations to determine the minimum number of Air Filtration Devices, which must be used in each work area.

D. Spray asbestos material with amended water, using spray equipment capable of providing a "mist" application to reduce the release of fibers. Saturate the material sufficiently to wet it to the substrate without causing excess dripping. Spray the asbestos material repeatedly during work process to maintain wet conditions and to minimize asbestos fiber dispersion.

E. Protect all fixtures, grills, lockers, chairs and stage area and other non-removable equipment from amended water. Surfactants can cause oxidation. Also, protect painted surfaces and flooring.

F. During each day's work, the bulk asbestos material shall be placed in two (2) six (6) millimeter thick labeled bags, before it dries. No asbestos material shall be allowed to lie on the floor overnight or for extended periods of time. Place the material in sealed containers. Place caution labels on containers in accordance with OSHA Regulation 29 CFR 1910.1001(g) (2); 1926.1101; and NESHAPS 61.149(d) if not already preprinted on containers. Clean external surfaces of containers thoroughly by wet wiping and/or HEPA vacuuming and pass the waste material out of the containment.

G. After completion of removal work, all surfaces from which asbestos has been removed shall be wet brushed and sponged or cleaned by an equivalent method to remove all visible material. During this work, the surfaces being cleaned shall be kept wet. At the Contractor's option, the layer of plastic exposed to the asbestos may be removed, leaving intact the final layer of plastic.

3.6.3 Cleanup and Air Monitoring

Employ the following procedures in cleaning up the work area:

A. Wet clean all surfaces including horizontal and vertical surfaces and remove all visible accumulation of ACM from the work area including the inner layer of plastic if not previously removed, special attention should be made to clean areas below wooden planking.

B. The asbestos abatement contractor shall request a pre-encapsulation inspection from the API prior to encapsulation.

C. After visual inspection of work area by the API, apply one (1) coat of an asbestos encapsulant sealer following manufacturer's recommendations for application while all plastic sheeting is in place.

D. Once the encapsulant has dried and while still under respirator protection, remove the outer layer or layers of plastic sheeting from the walls and floors. The critical barriers on the window, vents, doors, etc., shall remain, and HEPA filtration negative air pressure systems and decontamination enclosure system shall also remain in service.

Wet clean or HEPA vacuum work area underneath the plastic and leave the area visibly clean.

E. Dust, both visible and invisible, shall be allowed to settle for twenty-four (24) hours within the work area without being disturbed during this period.

F. After a settling period, wet clean or HEPA vacuum all surfaces within the work area. Once this cleaning operation is complete, visually inspect the work area to ensure that it is free of contamination.

G. Engineer will conduct a thorough visual inspection prior to air testing. Upon successful completion of the visual inspection, the final air clearance test will be conducted.

H. For work areas where >80 square feet (SF) or >40 linear feet (LF) of asbestos are removed, the final air clearance test will consist of an air test read by Transmission Electron Microscopy (TEM) with a concentration lower than the appropriate regulations (according to AHERA [40 CFR 763] protocol or City of Philadelphia Asbestos Control Regulations.). For smaller work areas where <80 SF or 40 LF of asbestos is removed, the final clearance test will consist of an air test read by Phase Contrast Microscopy (PCM) with a maximum level of 0.01 fibers per cubic centimeter of air (f/cc) being achieved prior to acceptance. High volume pumps (5 L/min to 10 L/min) will be used to collect a 1250 L minimum volume.

Aggressive sampling techniques will be used to re-entrain any fibers on the walls or floors in each area to be tested. Use of a one (1) hp "Leaf Blower" will be employed. The floors and lower wall will be blasted with air immediately prior to running the final air test.

Contractor shall continue cleaning the work site until the accepted fiber level is achieved.

Please note that a twenty-four (24) hour notice will be sent to the PFT Union after the visual inspection and encapsulation of the work area is complete. This could delay the clearance testing of the work area and should be taken into account by the asbestos abatement contractor.

I. When appropriate, the API will issue permission to remove critical barriers and other remaining plastic sheeting. No plastic sheeting should be removed until the API gives permission.

3.6.4 Disposal of ACM and Asbestos-Contaminated Waste

A. Asbestos materials: As the work progresses, and to prevent exceeding available storage capacity onsite, remove sealed and labeled containers of asbestos waste and dispose of such containers at an authorized disposal site in accordance with the requirements of disposal authority.

1. Bags of asbestos materials removed from the work area via the equipment decontamination enclosure shall be placed in a mechanically fastened drum or a second clear clean bag, which is then transported, in an enclosed vehicle. Appropriate labels shall be affixed to the outside of the container. Contractor will coordinate with the Owner or Engineer with regard to the location of the dumpster and/or transport vehicle on the premises.

2. The use of vacuum equipment may be employed to remove gross asbestos material from the work area. When use of such equipment is practical, a safety program shall be established to control release of asbestos fibers from routine operations and/or accidents.

3. The drums or bags shall be cleaned in the equipment decontamination enclosure as previously described and placed in the transport vehicle.

4. Local, state, and federal permits shall be obtained for the transportation of asbestos materials, and all procedures shall be followed as they pertain to transportation of asbestos materials.

5. Respiratory protection will be required in loading and unloading asbestos materials.

6. Transport vehicle shall be lined with six (6) millimeter plastic prior to loading asbestos waste. The vehicle shall be used for the sole purpose of transporting asbestos waste. No other contract materials or supplies shall be stored or transported in the vehicle unless it has been decontaminated.

7. Activities involving removal of waste, loading onto vehicle, and disposal at the landfill, shall be documented in daily reports indicating date and volume of material handled. A second document, Waste Shipment Record, shall be completed when material is disposed at landfill. The Waste Shipment Records shall be forwarded to the Owner within thirty-five (35) days of the date the waste was accepted by the disposal transporter in accordance with NESHAP61.149 (d)(2).

B. Asbestos-containing wastewater:

1. All wastewater shall be in bags or plastic-lined drums and transported to a landfill per the previous requirements for disposal.

3.6.5 Re-establishment of Objects and Systems

A. Relocate objects moved to temporary locations in the course of the work to their proper positions. Only clean objects are to be moved into the areas.

Remount objects removed in the course of the work to their former positions. Repair any moveable or fixed objects damaged during the course of the work.

Re-establish HVAC, mechanical, and electrical systems in proper working order.

Repair any damage to building, or building systems (electrical, mechanical, plumbing, etc.), which was not noted in writing prior to work area preparation.

Remove all glue and tape residue from any surface included but not limited to floors, walls, ceilings, door frames, windows and murals affected during the course of this work.

Repaint any areas damaged during the course of the work unless this work is scheduled to be repaired by others. Quality of paint and workmanship shall be consistent with that found within the building prior to the Project, unless otherwise stated.

B. When complete, the asbestos abatement contractor shall request a final inspection of the work area.

C. Following this request, the API will conduct a final inspection.

3.6.6 Final Report

Contractor will prepare a comprehensive final report to be submitted to Owner within 30 days of the completion of the project. This report will include as a minimum, landfill manifests (see also 3.6.4 (7)), descriptions of procedures used during the project, descriptions of unusual events (fines, citations, etc.) and description and warranty of workmanship on replacement insulation (if applicable)

*****END OF SECTION*****

SECTION 4

ASBESTOS REMOVAL
MINI-ENCLOSURE TECHNIQUE

4.1 GENERAL

4.1.1 Scope

A. This portion of the specification covers the abatement of asbestos-containing materials within a mini-enclosure technique where a non-friable ACM that has been rendered friable during the removal process such as glue dots.

B. Asbestos removal using mini-enclosure techniques may be employed for removing ACM where full containment is impractical, or regulations allow the use of mini-enclosure.

4.1.2 Description of Work

A. The Work specified herein shall be the removal of asbestos-containing materials by persons who are knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of ACM material using the mini-enclosure technique and the subsequent cleaning of the affected environment, who comply with Federal, State, and local regulations which mandate work practices- and who are capable of performing the Work of the Contract.

B. The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the Work in accordance with applicable governmental regulations and these Specifications.

C. Related Work Specified Elsewhere; refer to:

Scope of Work - Section 2
Full Enclosure Technique - Section 3

4.1.3 Terminology

The following terms used in these Specifications are defined in Section 1.

4.1.4 Applicable Documents

See paragraph 3.2 for Applicable Documents.

4.1.5 Submittals and Notices

In addition to the submittals and notices required in paragraph 3.2 the following are required.

Historic Airborne Fiber Data: Have available airborne asbestos fiber count data from an independent air monitoring firm to demonstrate the ability to perform the work in this section while maintaining an airborne fiber count below 0.1 fibers per cubic centimeter in the breathing zone of the individual performing the Work. Include the following data for each procedure required by the Work:

Date of measurements

Operations monitored

Sampling and analytical methods used and evidence of their accuracy

Number, duration, and results of samples taken

4.1.6 Personal Protection and Safety

A. The asbestos abatement contractor alone shall be responsible for the safety, efficiency, and adequacy of his work plan, appliances, methods, and for any damages, which may result from his operations, improper construction practices, or maintenance. He shall erect and properly maintain at all times as required by the conditions and progress of the Work, proper safeguards for the protection of workmen and the public and shall post warning signs around the job site.

B. During the removal operations, the asbestos abatement contractor may be placing his workers in a potentially hazardous electrical environment. Care and special consideration should be exercised by the Contractor to avoid electrical shock to his employees. Any temporary electrical power or alteration to the electrical system shall be completed by a School District of Philadelphia electrician.

C. Respiratory Protection Requirements

1. All respiratory protection programs shall be established in accordance with the respiratory protection requirements of 29 CFR 1910.134, 29 CFR 1910.1001, and 1926.58.

2. All respirators used shall be selected from those approved by the Mine Safety and Health Administration (MSHA) and/or the National Institute of Occupational Safety and Health (NIOSH) for use in atmospheres containing asbestos fibers.

3. Respiratory protection; Half-face air purifying respirator with HEPA cartridges are required, at a minimum.

4. The following activities may be performed wearing a Half-face air purifying respirator: pre-cleaning the Work area, preparing the Work area, loading the asbestos material in the transport vehicle, and unloading the transport vehicle at the landfill.

D. Provide workers and authorized visitors with sufficient sets of protective full body impervious protective clothing. Such clothing shall consist of full body coveralls, foot covering and headgear. Provide eye protection and hard hats as required by applicable safety regulations. Reusable type protective clothing and footwear shall be left in the Contaminated Equipment Room until the end of the asbestos abatement work, at which time such items shall be disposed of as asbestos waste or shall be thoroughly cleaned of all asbestos or ACM.

E. Provide and post, at the Work area, the decontamination and work procedures to be followed by workers and authorized visitors as described in these Specifications.

F. Worker Protection Procedures

Each worker and authorized visitor shall remove street clothes in a Change Room provided by the asbestos abatement contractor and put on a respirator and clean protective clothing before entering the Work area.

Each time they leave the work area, all workers and authorized visitors shall remove gross contamination from clothing, HEPA vacuum clothing, and then don a second disposable suit over the first. Workers and/or authorized visitors shall then proceed directly to the next Work area or proceed to the Decontamination area provided by the asbestos abatement contractor.

Workers removing waste containers from the Work area enclosure shall enter the holding area from outside wearing a respirator and dressed in clean disposable coveralls.

Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work area.

Workers shall be fully protected with respirators and protective clothing from the time of first disturbance of ACM or asbestos-contaminated materials prior to commencing actual asbestos abatement and until final cleanup is completed.

G. Equipment removal procedures: clean surfaces of contaminated containers and equipment thoroughly by wet sponging or wiping before moving such items to uncontaminated areas.

H. During summer work activities, the Work area environment may be very hot and humid. The asbestos abatement contractor shall take precautions to protect his workers from the hostile environment as well as the asbestos fibers. First-aid items such as stretchers, water and cold packs should be kept adjacent to the

Work area exits, thus allowing any personnel requiring emergency treatment egress from the Work area with minimum contamination to the clean environment. No worker shall be allowed to reach through the barrier to get water or first-aid supplies during break periods inside the Work area. Breaks, lunch, or worker rest periods should be held outside the Work area. All decontamination procedures shall be followed prior to exiting the Work area except in extreme emergencies.

If evacuation of the Work area is required by contaminated personnel due to an emergency, all work efforts shall stop, and all forces shall be directed at minimizing the area contamination, cleanup operations, and first-aid procedures. These activities shall be noted in the daily logbook.

I. Post safety warning signs which follow the "Sample Format Warning Sign" shown below:

Sample Format Warning Sign
Minimum Size - 24" x 36"
Material - Aluminum or Fiberglass
Script:

DANGER

ASBESTOS

MAY CAUSE CANCER

CAUSES DAMAGE TO LUNGS

AUTHORIZED PERSONNEL ONLY

WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA

Color - Black Letters on Red Background

J. Adequate shower facilities shall be provided by the asbestos abatement contractor. An employee leaving the Work area shall follow all decontamination procedures necessary or as described herein.

4.2 MATERIAL AND EQUIPMENT

4.2.1 Materials

Materials shall be as described in paragraph 3.4.

4.2.2 Tools and Equipment

Provide suitable tools for use inside a mini-enclosure and suitable for the Work at hand.

4.3 EXECUTION

4.3.1 Preparation

A. Separation of Work Areas from Occupied Areas

1. Separate the parts of the building required to remain in use from parts of the building that will undergo asbestos removal by means of barriers, constructed as follows:

   a. Critical barriers between the Work Area and other areas of the building are to be constructed. The critical barriers shall consist of two (2) independent layers of six (6) millimeter fire retardant plastic. If the integrity of the barriers is not acceptable to the Engineer, then an acceptable wood frame shall be constructed so as to enhance the integrity of the barrier.

   b. Place asbestos warning signs at the barrier and at all open entrances and exits to the work area. Signs must be placed conspicuously and must be easily read. Signs must conform to legal size and wording.

2. Shut down electric power. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment in accordance with applicable electrical code requirements.

3. Shut down and isolate heating, cooling, and ventilation air systems to prevent contamination and fiber dispersal to other areas of the structure. Physically blank off, with light gage metal, all supply and return air duct work which leads to and from a mini-enclosure work area when the air-handling unit cannot be isolated or shut down.

B. Pre-Clean Work Area

Pre-Clean Work area as described in paragraph 3.6.1.B.

C. Prepare Work Area

Prepare Work area as described in paragraph 4.3.2

D. Decontamination Enclosure Systems

Decontamination systems may be located in an area remote from but central to the Work. Contractor's employees shall have access to a shower facility after

performing asbestos-related work. An alternative method should be submitted to the City of Philadelphia Air Management for a remote decon, when appropriate.

E. Maintenance of Enclosure System

1. Ensure that barriers are maintained and intact at all times. Repair damaged barriers and remedy defects immediately upon discovery.

2. Visually inspect enclosures at the beginning of each work period.

F. Asbestos Removal Work Shall Not Commence Until:

1. Arrangements have been made for disposal of waste at an acceptable site.

2. Work areas and decontamination systems and parts of the building required to remain in use are effectively segregated.

3. Tools, equipment, and material waste receptors are on hand.

4. Arrangements have been made for building security.

5. All other preparatory steps have been taken, and applicable notices posted, and permits obtained.

6. The Contractor requests a pre-commencement inspection for the on-site technician.

4.3.2 Asbestos Removal - Mini-Enclosure Procedures

A. Shutdown and isolate any heating, cooling, and ventilation air systems to prevent contamination and fiber dispersal to other areas.

B. Remove any movable objects and cover all non-movable items with plastic.

C. Any openings (windows, doors, duct, diffusers, etc.) are sealed with a minimum of two (2) independent layers of six (6) millimeter thick polyethylene (poly) sheeting.

D. The six (6) millimeter thick fire-retardant polyethylene sheeting is affixed around the ACM work area with spray adhesive and tape.

E. The floor is covered with two (2) layers of six (6) millimeter thick polyethylene (poly) sheeting and attached to the walls.

F. A HEPA filtration unit or a HEPA vacuum is attached to the enclosure to provide negative air.

G. While inside the enclosure, workers wear disposable coveralls, proper respiratory protection, and head covering.

H. ACM is removed using wet removal techniques and HEPA vacuuming.

I. The removal surface is encapsulated.

J. Properly dispose of coveralls and other contaminated items. All contaminated material must be disposed of properly in accordance with procedures described in Section 3.

4.3.3 Cleanup and Air Monitoring

Employ the following procedures in cleaning up the Work area:

A. Wet clean all surfaces and remove all visible accumulation of ACM from the Work area.

B. Air sampling will be conducted outside the mini enclosure during removal. If the results of the air tests indicate a 0.01 f/cc level or greater, the Work shall be stopped, and the source of the fibers shall be determined. Upon mitigation of the fiber source, authorization to continue the Work may be issued.

C. After a visual inspection by the onsite Engineer and encapsulation of the Work area, a final air clearance test will be conducted.

D. The final air clearance test will be conducted in accordance with AHERA (40 CFR 763) and the City of Philadelphia Asbestos Control Regulations protocol. At minimum, the final air clearance test will consist of an air test by phase contract microscopy (PCM) with limits of 0.010 f/cc by NIOSH Method 7400.

Please note that a twenty-four (24) hour notice will be sent to the PFT Union after the visual inspection and encapsulation of the work area is complete. This could delay the clearance testing of the work area and should be taken into account by the asbestos abatement contractor.

4.3.4 Disposal of Asbestos-Containing Materials and Asbestos-Contaminated Wastes

Disposal of ACM and asbestos-contaminated wastes shall be as determined in Section 3.

4.3.5 Reestablishment of Objects and Systems

Re-establish objects and systems in accordance with section 3.

*** * * END OF SECTION * * ***

SECTION 5

NON-FRIABLE BLACKBOARD GLUE DOT REMOVAL

5.1 GENERAL

5.1.1 Scope

This section covers the abatement of blackboard glue dots in a non-friable manner.

5.1.2 Description of Work

A. Remove all blackboard glue dots for the installation of new smart boards and display boards. All glue dots shall be removed to original plaster or concrete walls by asbestos abatement contractor.

B. The work specified herein shall be the removal of glue dots by persons knowledgeable, qualified, and trained in the removal, treatment, handling, and disposal of asbestos-containing material, and the subsequent cleaning of the affected environment, and who comply with federal and state regulations which mandate work practices, and who are capable of performing the work of this contract.

C. The Contractor shall supply all labor, materials, equipment, services, insurance, and incidentals which are necessary or required to perform the work in accordance with applicable governmental regulations and these Specifications.

D. Related Work Specified Elsewhere; refer to:

Asbestos Removal – Sections 2 and 3

5.2 MATERIAL AND EQUIPMENT

5.2.1 Materials

Materials shall be as described in Section 3.

5.2.2 Tools and Equipment

A. Provide approved scrapers and knives for the removal of the glue dots.

B. If asbestos-containing glue dots are rendered friable during the removal, then the entire work area must be fully contained in accordance with Section 3 of this specification.

5.3 EXECUTION

5.3.1 Preparation

A. Prepare Work Area

1. Critical barriers between the work area and other areas of the building are to be constructed. The critical barriers shall consist of two (2) layers of 6-mil fire retardant plastic sheeting. If the integrity of the barrier is not acceptable to the API, then an acceptable wood frame shall be constructed so as to enhance the integrity of the barrier.

2. All HVAC registers, diffusers, duct, etc. shall be cleaned and sealed with plastic and duct tape.

3. Maintain established emergency and fire exits or establish alternative exit satisfactory to fire officials.

4. Outside access to the work area shall be restricted and security of the work area is the responsibility of the Contractor. Appropriate warning signs shall be posted to prevent unauthorized entrance to the work area.

5. Air filtration devices (AFD's) shall be employed inside the work area to provide air changes.

B. Decontamination Enclosure System

Workers should have access to a suitable decontamination system as described in Section 3, specifically a shower facility.

In all cases, access between contaminated and uncontaminated rooms or areas shall be through an airlock previously defined.

C. Maintenance of Barrier System

1. Ensure that barriers and plastic linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

2. Visually inspect barriers at the beginning of each work period.

D. Asbestos Removal Work Shall Not Commence Until:

1. Arrangements have been made for disposal of waste at an acceptable site.

2. Work areas and decontamination enclosure systems and parts of the building required to remain in use are effectively segregated.

3. Tools, equipment, and material waste receptors are on hand.

4. Arrangements have been made for building security.

5. All other preparatory steps have been taken and applicable notices posted and permits obtained.

6. The Contractor requests a pre-commencement inspection, in writing.

7. Removal work will not begin until the Engineer authorizes work to commence, in writing.

5.3.2 Asbestos Removal

A. Prepare site in accordance with paragraph 5.3.1.

B. Contractor shall utilize scrappers and knives to remove all glue dots in an intact condition.

C. The contractor will remove all glue dots and blackboards with the glue dots as asbestos containing waste.

D. Contractor shall exercise extreme caution when removing the glue dots to ensure that the surfaces from which they are removed are not damaged in any way.

E. Contractor shall utilize safe work practices and proper cleanup procedures.

F. Personal protection shall be tyvek suits and half-face air purifying respirators with HEPA cartridges or filters at a minimum.

G. All debris generated from the removal shall be placed daily in sealed containers. The containers shall be labeled in accordance with OSHA Regulation 29 CFR 1910.1001(g) (2) and NESHAP 61.149(d). Clean external surfaces of containers thoroughly by sponging in the designated areas. Move containers to holding area pending disposal. Ensure that containers are removed from the holding area by workers who have entered from uncontaminated work areas and are dressed in clean coveralls and wearing an appropriate respirator.

5.3.3 Cleanup and Air Monitoring

During the work, the API shall monitor the outside fiber levels.

Employ the following procedures in cleaning up the work area:

A. Prepare the work area for the air test, which will be performed after a visual inspection and encapsulation of the work area.

The final air clearance test will be conducted in accordance with AHERA (40 CFR 763) and the City of Philadelphia Asbestos Control Regulations protocol. At

minimum, the final air clearance test will consist of an air test by phase contract microscopy (PCM) with limits of 0.010 f/cc by NIOSH Method 7400.

Please note that a twenty-four (24) hour notice will be sent to the PFT Union after the visual inspection of the work area is complete, this could delay the clearance testing of the work area and should be taken into account by the asbestos abatement contractor.

B. After barriers are removed, the Engineer will conduct a final thorough visual inspection. The Contractor shall continue cleaning the work site until it passes the visual inspection.

5.3.4 Disposal of Asbestos-Containing Materials and Asbestos-Contaminated Waste

Disposal shall be performed in accordance with section 3.

5.3.5 Re-establishment of Objects and Systems

Re-establish objects and systems in accordance with section 3.

*****END OF SECTION*****